to be seen. On a cool cloudy day they can be beaten out of shelter by smartly tapping the clusters of branchlets, the net being held underneath. This beetle is an adept at shamming death. When the contents of the net are examined by tipping out on a bare place, all the vegetable rubbish, ladybirds, weavils and a variety of other life will be found.

In some seasons other jewels will turn up, belonging to the genus *Cisseis*. This genus is not a very showy one. Deep claret or plum colour prevails, but all species have their distinctive markings, which most often take the form of white dots forming a regular pattern. Two conspicuously dotted species are found on the foliage of blackboys on which they feed. To catch these one must approach the low blackboys cautiously, and when one is spotted at rest on the narrow foliage, strike swiftly and surely as they are quick off the mark. The first is known as *Cisseis 14-punctata*, the second as *C. stigmata*, the latter is beautifully shot with gold dust about the head and thorax. December and January are the best months for both. I have one of the spotted species taken in a Nedlands garden, but this is a larger insect.

Not all jewel beetles are brilliant above; the members of the genera *Curis*, *Neocuris* and *Ethon* are all dark-coloured insects when seen from above and some are inclined to small size, but a pocket lens will reveal the beautiful sculpturing of the wing cases.

Not much equipment is required for hunting jewel beetles. A gauze net, which can be made at home, encircling a ring of stiff fencing wire and terminating with a handle to be stepped into a metal socket or a length of electric light tubing, is all that is really necessary. To reach flowers at a height, a bamboo rod is needed. Then there is the killing bottle. Cyanide is a deadly poison and difficult to obtain, but petrol fumes are quite as effective. Obtain a small glass bottle with a wide mouth and a good-fitting cork, then get a wad of cotton wool and on this pour a teaspoonful of petrol. The captured insect is overcome by the fumes in a few seconds, but leave it in the bottle for an hour. The dead specimens should be enclosed in an airtight tin over night containing wet blotting paper or wadding. Next day *rigor mortis* will have been relaxed and the specimens can be carded with the antennae and legs in a natural position. Name, date and locality are to be marked on the card.

Not every year produces a good "Stig" season. An experienced collector told me that one in every three is the average. I find this is about correct, but some summers favour one species, some another. Just now (end of January) Quandong flowers are at their best and the variety of all sorts of bees, wasps, hornets and large flies visiting them is full of interest. Several species of "Stigs" also are attracted.

As a final remark let me state that the study of entomology has a very stimulating effect on the eyesight which becomes acute in a very short time.

BREEDING OF THE BLACK AND WHITE FANTAIL

(Rhipidura leucophrys)

By ERIC H. SEDGWICK, Government School, Caron.

A short time ago I had occasion to glance through my notes on the Black and White Fantail, and noticed that I had made a number of observations on one pair of birds at Nangeenan during 1934-1936. These notes by no means constitute an intensive study, but in the aggregate they give a fairly complete picture of the breeding cycle of the birds observed.

My assumption that the study is of one pair of birds is based on circumstantial evidence. In June, 1933, two birds took up territory near my residence and this territory was held without intermission at least until the time of my departure early in 1937. As the birds were not marked, I have no proof that the same two individuals were present throughout the whole of that period. On the other hand I have no reason to believe that any change took place.

For the sake of brevity I present the notes in what is substantially their original form, commencing from the beginning of 1934.

THE NOTES

1934: Feb. 26: The Wagtails, which were very vociferous during the breeding season, are now moulting and rather quiet. They chatter a good deal, but do not give their loud call-note frequently.

July 15: Noted Wagtail driving off a Horsefield Bronze Cuckoo.

Aug. 13: The Wagtails have a nest half built on a horizontal dead branch of a pepper tree *(Schinus molle)* which is growing close beside my house. The nest is well sheltered by foliage above and is about 18 feet from the ground.

Aug. 14: The Wagtails have been taking some strands of teased-out binder twine which I put on the fence near the nest. Though there has been no moon, the birds have been calling at night.

Aug. 20: The Wagtails are still adding to their nest and are now very aggressive, attacking Magpies, Magpie-larks, Chestnut-tailed Thornbills and other birds. One Thornbill was held down and pecked. An attack on two Welcome Swallows proved ineffective.

Aug. 24: Wagtails commenced brooding.

Sept. 27: Eggs apparently hatched. The birds seem to sit very little now.

Sept. 15: Saw young for the first time. The nest is too high and too well sheltered by leaves to be conveniently observed. No sign of egg shells under nest. [At Croydon, Victoria, in 1924, I saw a Wagtail leave a nest containing newly-hatched young and deposit an egg shell at a distance of 70 yards from the nest.]

Sept. 19: There are two young in the nest and they are beginning to be uncomfortably large for their quarters. While I was

watching the nest, one of the adults feigned injury, fluffing out its feathers and shuffling along the ground in such a manner that its legs were not visible.

Sept. 20: Young out of nest.

Sept. 23: Hearing an outcry from the Wagtails, I went to investigate. A Nankeen Kestrel flew from the nesting tree. I could not see the young birds.

Sept. 24: Young Wagtails safe and moving freely about the tree. A herd of cows is driven past daily and one adult bird follows them to their pasture, returning almost at once.

Sept. 27: Young Wagtails flying about near tree.

Sept. 28: The old birds are repairing the nest and the young are searching for food on their own, though the parents are still feeding them regularly.

Sept. 29: Noted a Magpie taking a great interest in the young birds until it was driven off by the adults.

Oct. 2: Two eggs in nest.

Oct. 3: Wagtail sitting again.

Oct. 7: One Wagtail sitting, one feeding young. The young now closely resemble the adults, except for the brownish bars on their wings.

Oct. 13: The Wagtails behave aggressively towards all birds of all species which enter their territory, except a Rufous Songlark and a party of White-winged Trillers.

Oct. 18: The second clutch has apparently hatched. The parents are not sitting much, but are adding to the nest; yesterday a bird was taking cobwebs from a window frame.

Oct. 20: Thought I heard call of second brood Wagtails today. The first brood birds have been trying the true call notes.

[The second brood apparently met with misfortune—perhaps a Magpie which showed great interest in the brood was responsible, or perhaps the Kestrels nesting nearby were to blame—at all events nothing more was heard of this brood and later I found the parents sitting again.]

Nov. 9: Today the third clutch hatched.

Nov. 11: Since Oct. 24 the first brood Wagtails appear to have been self-supporting. Now they are no longer in the vicinity.

Nov. 14: Young Wagtails showing over the edge of the nest.

Nov. 19: One young bird out of nest.

Nov. 20: Three (all) Wagtails out of nest.

Nov. 23: Disturbed one of the juveniles, causing it to fly to a branch between four and five feet from the ground.

Nov. 24: Young Wagtails ranging widely.

Dec. 8: Third brood still being fed, but I have not seen more than two for some days. Today I removed the nest, supposing that the birds would no longer require it. It is a well-built nest of cob-

webs, hair, shreds of hessian and feathers. The additions made before the final sitting constitute a second nest placed within the first, so that though the outside depth was finally 3½ in., the inside depth was only 1 in., probably no more than when the nest was first built. Diameter of nest, 3 in. [This nest was forwarded to the W.A. Naturalists' Club for exhibition. This use of one nest for three successive broods is unique in my experience of the species.]

1935: Feb. 2: Today I found another Wagtail's nest in the grounds. I cannot see how this nest could have been built without attracting attention, unless it was built during January while the place was deserted.

Mar. 3: The Wagtails still roost in their old nesting tree, but are not much in evidence during the day. One at least is moulting and both seem quiet.

Aug. 12: For the last week the Wagtails have been busy near their old nesting place. There is no sign of a nest yet, but both birds visit a certain branch and make peculiar movements over it with their bills.

Aug. 18: The nest appears to be almost complete, though almost hidden by the thickness of the branch upon which it is placed.

Aug. 25: Wagtails sitting.

Aug. 31: At least two, probably three, eggs in the nest.

Sept. 7: One egg and one newly-hatched chick in the nest. No sign of egg shells.

Sept. 8: Wagtails brooding young.

Sept. 23: Young Wagtails—two—now almost too big for the nest. Standing on edge of nest today.

Sept. 24: Young Wagtails flying about the tree.

Oct. 4: Young Wagtails still being fed. The old birds have started another nest in a tree twenty yards from the first. The old nest has disappeared—possibly the material is being used for the new nest.

Oct. 13: Wagtails sitting.

Nov. 3: Wagtails repairing nest. It would seem that the second brood has failed.

Nov. 8: Second brood has not failed—very lively; young birds appear almost ready to fly.

Nov. 9: Young out of nest and able to fly. Apparently they went to roost in the tree where the first nest was.

Nov. 23: Wagtails have commenced a third nest on the site of their first nest of this season.

Dec. 2: Wagtails sitting.

Dec. 9: Second brood birds still about.

[No further observations in respect of this season were possible.]

1936: Aug. 10: The third nest which the Wagtails built last year is still intact and since the end of July the birds have been about it a good deal. I think that they are building in the old nest.

Aug. 26: The Wagtails appear to be sitting. I should say that they probably started four or five days ago.